REMARKS

Claims 1 and 17 are amended and Claims 21 and 22 are cancelled. Claims 1-20, as amended, remain in the application. No new matter is added by the amendments to the claims.

The Rejections:

In the Office Action dated February 28, 2008, the Examiner rejected Claims 1-10, 17 and 20 under 35 U.S.C. 103(a) as being unpatentable over Suizu (US 4,592,692) in view of Seaberg (US 6,135,704).

Regarding Claims 1 and 17, the Examiner stated that Suizu teaches an apparatus for handling packages W between a pickup location and a spaced destination location, comprising:

a clamshell gripper means (26,23,24,25,etc.) adapted to be attached to a robotic arm (5,6,7,etc.);

a first means 42 for moving said clamshell gripper means between a clamped position and an undamped position;

a fork-type loader 22 adapted to be attached to the robotic arm;

a second means 30 for moving said fork-type loader between a pick position (conveyor 50) and an open position; and

control means (not numbered) connected to said first and second means for moving, said control means selectively operating said clamshell gripper means and said fork-type loader in independent and cooperative modes whereby said clamshell gripper means engages opposite sides of a package in said clamped position and said fork-type loader supports a bottom of the package in said pick position.

The Examiner commented that Suizu does not teach a fork and clamping device wherein the fork supports the bottom of a package from only one side and is the sole means of supporting the bottom of the package. According to the Examiner, Seaberg teaches a fork and clamping device wherein the fork supports the bottom of a package from only one side and is the sole means of supporting the bottom of the package for situations where space or access is restricted, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Suizu by the general teaching of Seaberg to have the fork and clamping

device wherein the fork supports the bottom of a package from only one side and is the sole means of supporting the bottom of the package for situations where space or access is restricted.

The Examiner further stated that, although Suizu is believed to teach the claimed clamping, in order to expedite the case and address Applicant's concern the following additional modification is added if it is determined that the claimed clamping (compression force) is not found in Suizu. Seaberg teaches clamshell grippers (40a-40d) clamp and apply a compression force in order to better lift and/or grip a group of items, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Suizu by Seaberg to have Suizu's clamshell gripper means clamp and apply a compression force in order to better lift and/or grip a group of items.

Regarding Claim 2, the Examiner stated that Suizu teaches an overhead base unit adapted to be attached to the robotic arm, said clamshell gripper means (26,etc.) and said fork-type loader 22 being mounted on said overhead base unit.

Regarding Claims 3 and 4, the Examiner stated that Suizu teaches (see figures 5-6) said clamshell gripper means further comprises a first/second side support mechanical linkage (not numbered) coupled to a first/second side support plate, said first/second side support mechanical linkage (not numbered) being pivoted about a first/second pivoting member, said first/second side support plate being adapted to engage one of the opposite sides of the package.

Regarding Claims 5 and 20, the Examiner stated that Suizu teaches said first side support mechanical linkage and said second side support mechanical linkage are mounted to transition between said unclamped position and said clamped position in an arc-like motion.

Regarding Claim 6, the Examiner stated that Suizu teaches a base unit (not numbered, see figures 5-6), said first and second side support linkages being pivotally mounted on said base unit for movement between said unclamped and clamped positions with an arc-like motion.

Regarding Claim 7, the Examiner stated that Suizu teaches said first means 42 for moving includes a pair of pneumatic cylinders each connected to an associated one of said first and second side support linkages, said cylinders being connected to said control means for actuation.

Regarding Claim 8, the Examiner stated that Suizu teaches (see figures 5-6) said fork-type loader 22 includes at least one arm being pivotally mounted and having one end connected to said second means for moving and an opposite end, and a fork-type support member (32,etc.)

attached to said at least one arm opposite end for engaging and supporting the bottom of the package W.

Regarding Claim 9, the Examiner stated that Suizu teaches said fork-type loader 22 being pivotally mounted on said base unit for movement between said pick and open positions with an arc-like motion.

Regarding Claim 10, the Examiner stated that Suizu teaches said second means 30 for moving includes a pneumatic cylinder connected to said fork-type loader, said cylinder being connected to said control means for actuation.

The Examiner rejected Claims 11-13 and 19 under 35 U.S.C. 103(a) as being unpatentable over Suizu in view of Seaberg and further in view of Dwyer (US 4,256,429).

Regarding Claims 11 and 19, the Examiner commented that Suizu is silent regarding a movable upper support pad. According to the Examiner, Dwyer teaches an upper support pad 112 (and third movement means 116) moveable between an engaged position for engaging an upper surface of the package and a disengaged position in order to aid package alignment, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Suizu by Dwyer to have an upper support pad moveable between an engaged position for engaging an upper surface of the package and a disengaged position in order to aid package alignment.

Regarding Claim 12, the Examiner stated that Suizu as already modified by Dwyer teaches said upper support pad is positioned above said fork-type loader when said fork-type loader is in said pick position.

Regarding Claim 13, the Examiner stated that Suizu as already modified by Dwyer teaches a pneumatic cylinder attached to said upper support pad, said cylinder being connected to said control means for actuation.

The Examiner rejected Claims 14-16 under 35 U.S.C. 103(a) as being unpatentable over Suizu in view of Seaberg and further in view of Borcea (US 4,741,568).

Regarding Claim 14, the Examiner commented that Suizu is silent regarding selectively limiting at least one of said unclamped position and said open position to less than a full travel. According to the Examiner, Borcea teaches (columns 1-2) soft stop means and a hard stop means connected to said control means for selectively limiting at least one of said unclamped position

and said open position to less than a full travel in order to avoid interference, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Suizu by Borcea to have soft stop means and/or a hard stop means connected to said control means for selectively limiting at least one of said unclamped position and said open position to less than a full travel in order to avoid interference.

Regarding Claim 15, the Examiner stated that Suizu as already modified by Borcea teaches said soft stop means controls at least one of said first and second means for moving.

Regarding Claim 16, the Examiner stated that Suizu as already modified by Borcea teaches said hard stop means includes a stop (Borcea 17,42,etc.) for engaging one of said clamshell gripper means and said fork-type loader and a stop actuator (Borcea 17,42,etc.) connected to said control means for selectively moving said stop.

The Examiner rejected Claim 18 under 35 U.S.C. 103(a) as being unpatentable over Suizu in view of Seaberg and further in view of Borcea. The Examiner commented that Suizu is silent regarding selectively limiting at least one of said undamped position and said open position to less than a full travel. According to the Examiner, Borcea teaches (columns 1-2) soft stop means and a hard stop means connected to said control means for selectively limiting at least one of said undamped position and said open position to less than a full travel in order to avoid interference, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Suizu by Borcea to have soft stop means and/or a hard stop means connected to said control means for selectively limiting at least one of said undamped position and said open position to less than a full travel in order to avoid interference.

The Examiner rejected Claims 21 and 22 under 35 U.S.C. 103(a) as being unpatentable over Suizu in view of Borcea. The Examiner commented that Suizu is silent regarding selectively limiting at least one of said unclamped position and said open position to less than a full travel. According to the Examiner, Borcea teaches (columns 1-2) soft stop means and a hard stop means connected to said control means for selectively limiting at least one of said unclamped position and said open position to less than a full travel in order to avoid interference, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Suizu by Borcea to have soft stop means and/or a hard stop means

connected to said control means for selectively limiting at least one of said unclamped position and said open position to less than a full travel in order to avoid interference.

The Response:

The Examiner rejected Claims 1-10, 17 and 20 under 35 U.S.C. 103(a) as being unpatentable over Suizu in view of Seaberg. The Examiner identified Suizu elements **26, 23, 24, 25**, etc. as the "clamshell gripper means" recited in Applicant's claims. The Examiner stated that Suizu teaches (see figures 5-6) said clamshell gripper means further comprises a first/second side support mechanical linkage (not numbered) coupled to a first/second side support plate, said first/second side support mechanical linkage (not numbered) being pivoted about a first/second pivoting member, said first/second side support plate being adapted to engage one of the opposite sides of the package.

Applicant amended Claims 1 and 17 to recite "a first means for pivoting said clamshell gripper means between a clamped position and an unclamped position" and "a first moving means attached to said free end of said robotic arm and to said clamshell gripper means for pivoting said clamshell gripper means between a clamped position and an unclamped position" respectively. Claims 1 and 17 further recite that the clamshell gripper means engages and applies a compressive force to opposite sides of the package in a clamped position.

Suizu shows a support frame **21** having right and left package line-up plates **23** provided thereon, the plates being movable horizontally towards and away from one another for package line-up. (Col. 2, Lines 66-68) A stopper plate **24** is mounted on the front of the support frame **21** to be capable of edgewise ascending and descending. (Col. 3, Lines 1-3) Neither the line-up plate **23** nor the stopper plate **24** pivots and, therefore, cannot be the claimed pivotally attached clamshell gripper means.

A plurality of engaging rods **25** are provided on the lower section at the rear of the support frame **21** and swing between a downwardly projecting operative position and a rearwardly projecting inoperative position. (Col. 3, Lines 3-8) The engaging rods **25** are used to line-up the rear sides of the packages up on the roller conveyor. (Col. 8, Lines 61-66) However, the rods **25** are opposed by the stopper plate **24** that only moves vertically. Clearly, the rods **25** and the stopper plate **24** cannot be the claimed pivotally attached clamshell gripper means that

pivot to engage and apply a compressive force to opposite sides of the package in a clamped position.

A plurality of lower stage stopper plates **26** are mounted on the lower section of each of the package line-up plates **23** and swing between a downwardly projecting operative position and a laterally outwardly projecting inoperative position. (Col. 3, Lines 8-14) Each stopper plate **26** is supported on a separate shaft (Fig. 6) on the outside of the associated package line-up plate **23** for rotation. (Col. 4, Lines 13-18) When the packages of one stage in the pattern are lined up on the roller conveyor at the package line-up position **1**, the forks **22** and the engagement rods **25** descend. (Col. 8, Lines 56-61) The sides of the packages are lined up straight by the stopper **58**, the engagement rods **25** and the package line-up plates **23** on both sides. (Col. 8, Lines 61-66) As is clearly shown in Fig. 5, when the line-up plates **23** are in a position wherein a side of a package abuts one of the line-up plates **23**, the package will not abut the stopper plate **26** because the stopper plate **26** is positioned outside of the line-up plate **23** as stated above. Also, the stopper plates **26** cannot abut the packages because the bottoms of the packages are supported by the fork members **22** (shown in phantom line) adjacent the bottom edges of the line-up plates **23** and, therefore, the packages are above the stopper plates **26**. Clearly, the stopper plates **26**, which don't contact the packages, cannot be the claimed pivotally attached clamshell gripper means that engages and applies a compressive force to opposite sides of the package in a clamped position.

Also, Suizu states that when the frame **7** moves and then stops, the packages **W** are liable to shift forward by their inertia, but because this is prevented by the stopper plate **24**, in practice this does not occur. (Col. 9, Lines 18-21) Obviously the plates **23** and **26**, the stopper plate **24** and the rods **25** are not gripping the sides of the packages **W** if the packages could shift forward in the absence of the stopper plate **24**.

Further evidence that the stopper plates **26** are not the "clamshell gripper means" recited in Applicants' claims is that the stopper plates **26** descend to abut either the pallet or the packages already on the pallet when the package holding apparatus **20** moves to the pallet loading position **2** carrying a stage of packages. Thus, the stopper plates **26** never clamp on the packages being transported by the package holding apparatus **20**.

There is no showing or suggestion in Suizu that the Examiner identified elements **26, 23, 24, 25**, etc. engage and apply a compression force to opposite sides of a package in the clamped position as recited in Applicants' Claims 1 and 17. Seaberg, Dwyer and Borcea do not provide the missing pivotally attached clamshell gripper means.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.